sequence.

43 (Amended). The nucleic acid molecule as claimed in claim 42 wherein the modified nucleic acid molecule is of maize origin.

~~44~~ (Amended). An isolated polynucleotide molecule having the sequence of SEQ ID NO: 4.

46 (Amended). The vector of claim 45 further comprising nucleic acid encoding a chloroplast transit peptide operably associated with, and in the order of transcription between, the promoter functional in a plant cell and the nucleic acid of claim 42.

47 (Amended). A plant cell comprising a vector comprising the following components, which are operably associated in the direction of transcription:

(a) a promoter functional in a plant cell;

(b) nucleic acid encoding a chloroplast transit peptide;

(c) a modified nucleic acid molecule of maize origin encoding an EPSPS enzyme, the modifications comprising:

a first modification of a coding sequence that normally encodes a threonine that is located, relative to the gene from which it is derived, at position 102 of the amino acid sequence of mature EPSPS sequence of SEQ ID NO: 3, to encode isoleucine in a mature plant EPSPS sequence; and

a second modification of a coding sequence that normally encodes a proline that is located, relative to the gene from which it is derived, at position 106 of the amino acid sequence of mature EPSPS sequence of SEQ ID NO: 3, to encode serine in a mature plant EPSPS sequence; and

(d) an untranslated transcription termination signal region.

~~48~~ (Amended). The plant cell of claim ~~47~~ 6 which is a monocot plant cell with increased tolerance to glyphosate herbicides relative to ~~an unmodified~~ a non-transformed plant cell.

~~49~~ (Amended). The plant cell of claim ~~47~~ 6 which is a dicot plant cell with increased tolerance to glyphosate herbicide relative to ~~an unmodified~~ a non-transformed plant cell.

50 (Amended). A transgenic plant comprising a vector comprising the following components, which are operably associated in the direction of transcription:

(a) a promoter functional in a plant cell;

(b) nucleic acid encoding a chloroplast transit peptide;

(c) a modified nucleic acid molecule of plant origin encoding an EPSPS enzyme, the modifications comprising:

a first modification of a coding sequence that normally encodes a threonine that is located, relative to the gene from which it is derived, at position 102 of the amino acid sequence of mature EPSPS sequence of SEQ ID NO: 3, to encode isoleucine in a mature plant EPSPS sequence; and

a second modification of a coding sequence that normally encodes a proline that is located, relative to the gene from which it is derived, at position 106 of the amino acid sequence of mature EPSPS sequence of SEQ ID NO: 3, to encode serine in a mature plant EPSPS sequence; and

(d) an untranslated transcription termination signal region.

10 ~~51~~ (Amended). The transgenic plant of claim ~~50~~ 9 which is a monocot with increased tolerance to glyphosate herbicides relative to a non-transgenic ~~an unmodified~~ plant.

11 ~~52~~ (Amended). The transgenic plant of claim ~~50~~ 9 which is a dicot with increased tolerance to glyphosate herbicides relative to a non-transgenic ~~an unmodified~~ plant.

53 (Amended). A method for selectively controlling plants which method comprises the steps of:

a) planting crop seeds or plants which have increased glyphosate tolerance as a result of a chimeric gene being inserted into said crop seed or plant, said chimeric gene having

(i) a promoter region functional in a plant cell; and

(ii) a nucleic acid molecule of plant origin encoding a modified EPSPS enzyme, the modifications comprising:

a first modification of a coding sequence that normally encodes a threonine that is

46

located, relative to the gene from which it is derived, at position 102 of the amino acid sequence of mature EPSPS sequence of SEQ ID NO: 3, to encode isoleucine in a mature plant EPSPS sequence; and

a second modification of a coding sequence that normally encodes a proline that is located, relative to the gene from which it is derived, at position 106 of the amino acid sequence of mature EPSPS sequence of SEQ ID NO: 3, to encode serine in a mature plant EPSPS sequence; and

(iii) an untranslated transcription termination signal region; and

b) applying to said plants a sufficient amount of glyphosate to control said untransformed plants without significantly affecting said plants that comprise the chimeric gene.

Please add new claim 54:

54. A plant comprising a mature EPSPS protein of plant origin having isoleucine substituted for the threonine that is relatively located at position 102 of the amino acid sequence of mature EPSPS sequence of SEQ ID NO: 3; and

serine substituted for the proline that is relatively located at position 106 of the amino acid sequence of mature EPSPS sequence of SEQ ID NO: 3.